REMARKS

Status of the Claims

Claims 1-2 and 12-13 are currently pending. Claims 3-11 were withdrawn from further consideration in response to a restriction requirement under 37 C.F.R. §1.142(b).

In the present Response, claims 1-2 and 12-13 are cancelled; and new claims 14-27 are added. Thus, after entry of these amendments, claims 14-27 are presented for consideration.

Pursuant to the Office Action, claims 12-13 are rejected under 35 U.S.C. §112, first paragraph, because the application allegedly does not reasonably provide enablement for the claims and for containing subject matter which was not described in the specification in such a away as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. Claims 1-2 are rejected under 35 U.S.C. §103 as allegedly being unpatentable over Kawarabayasi *et al.* (1998) *DNA Research*, **5**:55-76 (hereinafter "Kawarabayasi") in view of Sambrook *et al.* (1989) *Molecular Cloning, Laboratory Manual*, second ed., Cold Spring Harbor Laboratory Press (hereinafter "Sambrook").

Support for the Claim Amendments

Support for claim 14 drawn to a method for using an enzyme having the amino acid sequence of SEQ ID NO:2 as a β-glycosidase can be found throughout the specification, in particular, at least at page 2, line 28, to page 3, line 4; and page 23, lines 13-17. Support for claim 15 can be found at least at page 4, lines 10-15, and page 19, lines 11-12. Support for claim 16 can be found at least at page 4, lines 15-17. Support for claim 17, can be found at least at page 20, lines 22-26. Support for claim 18 can be found at least at page 19, line 23, to page 20, line 1. Support for claim 19 can be found at least at page 2, lines 5-7. Support for claim 20 can be found at least at page 4, lines 17-19. Support for claim 21 can be found at least at page 2, lines 9-10. Support for claim 22 can be found at least at page 7, lines 17-18 and originally filed claim 3. Support for claims 23 and 24 can be found at least at page 3, lines 20-23. Support for

claims 25 and 26 can be found at least at page 4, lines 2-9. Support for claim 27 can be found at least at page 16, lines 13-15.

Objections to the specification

The Office Action objects to the specification for not complying with sequence rules. Applicants herewith submit a paper copy and an electron version on disk of the sequence listing, along with a Statement Under 37 C.F.R. §§1.821(f) and (g), and a Verified Statement Under C.F.R. §1.821(f). Applicants aver that the present submission differs from the May 7, 2001, submission accompanying the copy of the Notice to Comply with Requirements for Patent Applications Containing Nucleotide Sequence and/or Amino Acid Sequence Disclosures only in the deletion of SEQ ID NO:5 in the May 7th submission, as this sequence was listing twice. Therefore, in the present submission, SEQ ID Nos:6-10 in the May 7th submission have been renumbered as SEQ ID Nos:5-9. The present submission and the amendment to the specification in the present Response should overcome the objection to the specification.

Objections to the claims

Claims 12 and 13 are objected to for informalities. As claims 12 and 13 are canceled, this objection is now moot.

Rejection under 35 U.S.C. §112, first paragraph

Claims 12-13 are rejected under 35 U.S.C. §112, first paragraph, because the application allegedly does not reasonably provide enablement for the claims. Moreover, claims 12-13 are also rejected for containing subject matter which was not described in the specification in such a away as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

As Applicants have canceled claims 12-13, this rejection is now moot.

Rejection under 35 U.S.C. §103

Claims 1-2 are rejected under 35 U.S.C. §103 as allegedly being unpatentable over Kawarabayasi *et al.* (1998) *DNA Research*, **5**:55-76 (hereinafter "Kawarabayasi") in view of Sambrook *et al.* (1989) *Molecular Cloning, Laboratory Manual*, second ed., Cold Spring Harbor Laboratory Press (hereinafter "Sambrook").

As Applicants have canceled claims 1-2, this rejection is now moot.

Applicants have, however, added new claims 14-27 drawn to a method of using the enzyme comprising SEQ ID NO:2, as a β-glycosidase.

Kawarabayasi discloses a number of predicted protein products of a *Pyrococcus horikoshii* archaebacterium based upon sequence identity to other known products. For the matter at hand, Kawarabayasi predicts a protein at open reading frame PH0366 as a β-glucosidase based on 64.49% identity.

For a proper rejection under 35 U.S.C. §102, a single reference must teach all the claim limitations. For a proper rejection under 35 U.S.C. §103, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

Applicants new claim 14 is directed to a method for using the enzyme of SEQ ID NO:2 as a β-glycosidase. Thus, Kawarabayasi is deficient as an anticipatory or an obviousness-type reference as it does not teach, suggest, or motivate one skilled in the art to use the protein the reference predicted as being a β-glucosidase as a β-glycosidase.

Sambrook does not cure the deficiencies of Kawarabayasi so as to render claim 14 obvious as Sambrook is a laboratory manual that teaches the techniques of DNA sequence cloning and expression. Thus, neither Kawarabayasi nor Sambrook, alone or in proper combination, render Applicants' claimed invention unpatentable.

Accordingly, Applicants respectfully submit that claim 14 and claims 15-27, which depend either directly or indirectly from claim 14 and, thus, incorporate all the limitations thereof, are patentable over Kawarabayasi alone or in view of Sambrook.

CONCLUSION

Claims 1-2 and 12-13 are pending in the application. Claims 1-2 and 12-13 have been cancelled; and claims 14-27 have been added by the present Response. Applicants request that the Examiner reconsider the application and claims in light of the foregoing reasons and amendments and respectfully submit that the claims are in condition for allowance. If, in the Examiner's opinion, a telephonic interview would expedite the favorable prosecution of the present application, the undersigned attorney would welcome the opportunity to discuss any outstanding issues and to work with the Examiner toward placing the application in condition for allowance.

Attached is a marked-up version of the changes being made by the current amendment.

Applicants believe that no additional fees are necessitated by the present Response. However, in the event any fees are due, the Commissioner is hereby authorized to charge any such fees to Deposit Account No. 06-1050.

Respectfully submitted,

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Version with markings to show changes made

In the specification:

The paragraph beginning at page 5, line 24, has been amended as follows:

Figure 5 shows aligned amino acid sequences (SEQ ID NOs:2, 5-8) of five β-glycosidases from hyperthermophilic archaea. The abbreviations of the sources of the enzymes are: BGPh, β-glycosidase from P. horikoshii (SEQ ID NO: 2 [5]); BMPh, a β-mannosidase gene homolog from P. horikoshii (8,9)(SEQ ID NO: 5 [6]); BGPf, β-glucosidase from P. furiosus (17)(SEQ ID NO: 6 [8]); BMPf, β-mannosidase from P. furiosus (17)(SEQ ID NO:7); S β-gly, β-glycosidase from Sulfolobus solfataricus (18)(SEQ ID NO: 8 [9]); and the Consensus sequence (SEQ ID NO: 9 [10]). The conserved residues, identified automatically by the GeneWorks program, are shown in the open boxes. The reversed open triangles indicate the location of the nucleophile (E324) and the putative acid/base catalyst (E155 and H111) with R75 in the spatial proximity of the nucleophile of BGPh. The arrow shows [shoes] the prominent deletion of more than 30 residues found in BGPh.

In the claims:

Claims 1-2 and 12-13 have been cancelled.